Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-41 are pending in the application, with 1, 11, 20, 27, 30, and 38 being the independent claims. Independent claim 1 is sought to be amended to correct a typographical error. This change is believed to introduce no new matter, and its entry is respectfully requested.

Based on the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

The Examiner, on page 2 of the current Office Action, has rejected claims 1-41 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,285,779 to Lapidous *et al.* (hereinafter "Lapidous") in view of "MIPS R4000 Microprocessor User's Manual" by J. Heinrich (hereinafter "Heinrich"). Applicants respectfully traverse this rejection. Based on the remarks set forth below, Applicants respectfully request that this rejection be reconsidered and withdrawn.

The Examiner states that Lapidous discloses the claimed features of Applicants' invention with respect to claim 1, except that Lapidous does not explicitly disclose the processing of floating point compare operations. The Examiner further states that the processing of floating point compare operations are taught by Heinrich.

Applicants agree that Lapidous does not disclose the processing of floating point compare operations. However, Applicants respectfully disagree that Heinrich teaches this feature.

As stated in the Remarks in response to the previous Office Action, Heinrich does not solve the deficiencies of Lapidous. The present invention uses "a floating point magnitude compare instruction to perform a magnitude comparison" as recited in independent claim 1. The floating point magnitude compare instruction takes two input values specified by the instruction and compares their absolute values using the compare condition specified in the instruction.

Contrary to the present invention, Heinrich does not teach or suggest a floating point magnitude compare instruction. Instead, Heinrich teaches a floating point compare of the actual values of the two input values, which includes their sign.

Thus, neither Lapidous nor Heinrich, separately or in combination, teach or suggest Applicants' claimed invention of "a floating point magnitude compare instruction to perform a magnitude comparison" as recited in independent claim 1.

In the Response to Arguments on page 7 of the current Office Action, the Examiner states that "the features upon which applicant relies (i.e., compares their absolute values using the compare condition specified in the instruction)... are not recited in the rejected claims." Applicants respectfully submit that in mathematics, it is commonly known that a magnitude of a number is simply a size or quantity (i.e., always positive), with no regard to whether the number itself is signed positive or negative. In other words, the magnitude of a number is simply the number with the sign removed, which is also the definition of an absolute number. In the American Heritage Dictionary (Second College Edition, Houghton

Mifflin Company, Boston (1982)), the first definition of the term 'absolute value' is "the numerical value or magnitude of a quantity, as of a vector or of a negative integer, without regard to its sign." Also, according to the McGraw-Hill Dictionary of Scientific and Technical Terms (4th Edition, McGraw-Hill, New York (1989)), the explanation of the term 'absolute value of a real number' includes the statement "[a]lso known as magnitude of a real number; numerical value of a real number." In the same McGraw-Hill dictionary, the entry under the term 'magnitude of a real number' states, "*[s]ee* absolute value of a real number." Therefore, the word magnitude as used in the claims of the present invention implicitly defines a "magnitude comparison" to be a comparison of absolute values. The definition of 'magnitude' as described here would be known to those skilled in the art of the present invention as well as in the broader art of mathematics.

For at least the reasons stated above, claim 1 and the claims that depend therefrom (claims 2-10 and 40) are patentable over the cited references of Lapidous and Heinrich. Independent claims 11, 20, 27, 30, and 38 also include the feature of "a magnitude compare instruction" or "magnitude compare operation(s)" in which absolute values are compared. Thus, for at least the reasons stated above, independent claims 11, 20, 27, 30, and 38 and the claims that depend therefrom (claims 12-19 and 41, claims 21-26, claims 28-29, claims 31-37, and claim 39, respectively) are also patentable over the cited references. Applicants therefore respectfully request that the Examiner reconsider and withdraw the rejection of claims 1-41.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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Version with markings to show changes made

In the Claims:

Please amend the following claim as follows.

Amend claim 1, as follows:

1. (Once Amended) In a processor, a method for performing computer graphics calculations, said method comprising:

representing a vertex in a computer graphics image with a plurality of coordinates;

transforming said plurality of coordinates into a plurality of transformed coordinates; and

using a floating point magnitude compare instruction to perform a magnitude comparison between [a] at least a portion of said plurality of transformed coordinates and a value representing a plurality of edges of a specified view volume, wherein comparison results for at least three view volume edges are obtained.